



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,232	09/02/2004	Meir Bartur	ZONI.MB.17	5231
47473 7590 11/09/2007 OPTICAL ZONU CORPORATION 15028 DELANO STREET VAN NUYS, CA 91411			EXAMINER LEUNG, WAI LUN	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 11/09/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/711,232	Applicant(s) BARTUR ET AL.	
	Examiner Wai Lun Leung	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Furthermore, the key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.* note that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn* 441 F.3d977,988,78 USPQ2d1329,1336(Fed.Cir.2006) stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Dawson et al.** (US005416623A), in view of **Sanchez** (US006494370B1).

Regarding claim 1, **Dawson** discloses an optical transceiver (fig 1), comprising: a transmitter (fig 1, 3) capable to transmit high speed data (col 4, ln 35-60, high speed correlator 9 is being used to synchronize with test sequence generator 1 to generate high speed data); a receiver (fig 1, 6) comprises a signal recovery circuitry (fig 1, 9) and capable to receive high

Art Unit: 2613

speed data (*col 4, ln 35-37*); and a microcontroller (*fig 1, 11*) coupled to the said transmitter and receiver and providing a modulated power control current to the transmitter during an impulse test mode (*col 4, ln 38-col 5, ln 4*) to transmit high optical power signal and monitoring received signals to detect reflections (*col 5, ln 5-25*). **Dawson** does not disclose expressly wherein the transmitter comprising a laser diode and a laser driver providing a drive signal to the laser diode; or wherein the receiver comprising a photodiode.

**Sanchez**, from the same field of endeavor, teaches an optical transceiver (*fig 2B*), comprising: a transmitter (*fig 3, 1*) comprising a laser diode (*fig 3, 2*) and a laser driver providing a drive signal to the laser diode (*col 5, ln 47-56*); a receiver comprising a photodiode (*fig 2B, 275*); and a microcontroller (*fig 2B, 300*) coupled to the said transmitter and receiver and providing a modulated power control current to the laser (*col 4, ln 1-8*). Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to use a laser diode with a laser driver providing a drive signal to the laser diode in **Dawson's** transmitter and a photo diode in **Dawson's** receiver such that **Dawson's** microcontroller coupled to the said transmitter and receiver and providing a modulated power control current to the laser during an impulse test mode in **Dawson's** system as suggested by **Sanchez**, upon which the claimed invention can be seen as an "improvement" would have yielded predictable results and resulted in an improvement system, since **Sanchez's** teaching is capable of enhancing performance of optical transmission strength by using laser.

Therefore, the rationale of applying a known technique (**Sanchez's**) to a known system (**Dawson's**) ready for improvement to yield predictable results has been clearly articulated herein with the *Graham* inquiries and findings as presented above. In *Dann v. Johnston* 525 U.S. 219,

Art Unit: 2613

189 USPQ257 (1976) The Court held that “[t]he gap between the prior art and respondent’s system is simply not so great as to render the system nonobvious to one reasonable skilled in the art.”

As to claim 2, **Dawson** further teaches wherein said transmitter and receiver are coupled to same fiber (*fig 1, by bi-directional coupler*).

As to claim 3, **Sanchez** further teaches wherein said modulated power control is controlling a laser driver that has modulation and bias power control inputs and wherein said microcontroller modulates said bias control input during said test mode (*col 6, ln 26-65*).

As to claim 4, **Sanchez** further teaches wherein said microcontroller modulates said power control signal employing, in addition to the laser driver used for the data link, a dedicated transistor for direct high current impulse drive of the laser (*fig 3, D/A 330 provides driving current  $I_{dc}$  in addition to the current provided by driver 8*)).

As to claim 5, **Sanchez** further teaches wherein said receiver further comprises a transimpedance amplifier (*fig 4, configuration of 420 and 412 is commonly known as transimpedance amplifier*) coupled to the photodiode (*fig 4, 409*) and wherein said microcontroller monitors the output of said transimpedance amplifier during said impulse test mode (*col 9, ln 1-28*).

As to claim 6, **Sanchez** further teaches an optical transceiver as set out in claim 5, further comprising a comparator (*fig 4, 432, where it is common and well known that an A/D converter inherently includes a comparator; i.e. analog signal being compared to a certain threshold in order to determined as 1 or 0*) coupled between the output of said transimpedance amplifier (*fig*

Art Unit: 2613

4, *output of 420*) and said microcontroller (*fig 4, 431*), for detecting signals at the output of the transimpedance amplifier (*col 9, ln 1-56*).

As to claim 8, **Dawson** further teaches wherein the impulse test signal comprise a code sequence (*col 4, ln 45-60*).

As to claim 9, **Dawson** further teaches wherein said microcontroller is capable to detect the code sequence at the output of the comparator (*col 4, ln 45-col 6, ln 29*).

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Dawson et al.** (*US005416623A*), in view of **Sanchez** (*US006494370B1*), as applied to claim 6 above, and further in view of **Hochstuhl et al.** (*US005831753A*).

Regarding claim 7, **the combination of Dawson and Sanchez** discloses the optical transceiver in accordance to claim 6 as discussed above. **It** does not disclose expressly wherein said comparator detection level is controlled during the impulse test mode to be more sensitive than during data transport mode. **Hochstuhl**, from the same field of endeavor, teaches an optical transmission system wherein a comparator detection level is controlled during the impulse test mode to be more sensitive than during data transport mode (*col 3, ln 20-57*). Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to vary the comparator sensitivity in **the combination of Dawson and Sanchez's** system as suggested by **Hochstuhl**. The motivation for doing so would have been to adjust the sensitivity to the most appropriate level in accordance to the purpose of the application so as to achieve the optimal result. Therefore, the rationale of applying a known technique (**Hochstuhl's**) to a known system (**the combination of Dawson and Sanchez's**) ready for improvement to yield predictable results has been clearly articulated herein with the *Graham* inquiries and findings as presented above.

Art Unit: 2613

In *Dann v. Johnston* 525 U.S. 219, 189 USPQ257 (1976) The Court held that “[t]he gap between the prior art and respondent’s system is simply not so great as to render the system nonobvious to one reasonable skilled in the art.”

4. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yarkosky et al.** (*US005844702A*), in view of **Levinson et al.** (*US005956168A*).

Regarding claim 10, **Yarkosky** discloses a method for detection of high optical reflection in a fiber optic network, comprising: a single fiber link whereby data transport in both direction is conducted through the same fiber at the same wavelength (*col 3, ln 27-42*); and detecting any received signals modulated within a predetermined time period after said transmitting (*col 3, ln 4-23*). **Yarkosky** does not disclose expressly transmitting an impulse test signal by modulating a laser transmitter using an impulse test transmission mode which is different than a data transmission mode during normal operating conditions. **Levinson**, from the same field of endeavor, teaches a method for detection of optical signals in a fiber optic network, comprising transmitting an impulse test signal by modulating a laser transmitter using an impulse test transmission mode which is different than a data transmission mode during normal operating conditions (*col 4, ln 31-44*). Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to implement an impulse test signal by modulating a laser transmitter using an impulse test transmission mode which is different than a data transmission mode during normal operating conditions onto **Yarkosky**’s system as suggested by **Levinson**. That is, it would have been obvious for a person of ordinary skill in the art at the time of invention to recognized that applying a known technique such as that of **Levinson**’s onto **Yarkosky**’s base method upon which the claimed invention can be seen as an “improvement”

Art Unit: 2613

would have yielded predictable results and resulted in an improvement system, since **Levinson's** teaching is capable of enhancing performance of optical signal error detection by using a data transmission mode and an impulse test transmission mode.

Therefore, the rationale of applying a known technique (**Levinson's**) to a known method (**Yarkosky's**) ready for improvement to yield predictable results has been clearly articulated herein with the *Graham* inquiries and findings as presented above. In *Dann v. Johnston* 525 U.S. 219, 189 USPQ257 (1976) The Court held that "[t]he gap between the prior art and respondent's system is simply not so great as to render the system nonobvious to one reasonable skilled in the art."

As to claim 11, **Levinson** further teaches wherein said test transmission mode comprises modulating the same laser at a power level above the minimum threshold for normal data transmission (*col 4, ln 9-30*).

As to claim 12, **Levinson** further teaches wherein said test transmission mode comprises modulating the same laser at a frequency substantially lower than during normal data transmission (*col 5, ln 55-64*).

As to claim 13, **Levinson** further teaches further comprising detecting and measuring the time delay for receiving the reflected test pulse and determining the location of the reflection (*col 10, ln 29-col 11, ln 16*).

As to claim 14, **Levinson** further teaches further comprising increasing the laser transmitter power during transmission of said short duration test pulse (*col 10, ln 29-col 11, ln 16*).



Art Unit: 2613

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yarkosky et al.** (*US005844702A*), in view of **Levinson et al.** (*US005956168A*), as applied to claim 14 above, and further in view of **Hochstuhel et al.** (*US005831753A*).

Regarding claim 15, **the combination of Yarkosky and Levinson** discloses the method for detection of high optical reflection in a fiber optic network in accordance to claim 10 as discussed above. It does not disclose expressly comprising increasing the detection sensitivity after the transmission of the said short duration test pulse. **Hochstuhel**, from the same field of endeavor, teaches an optical transmission method comprising increasing the detection sensitivity after the transmission of the said short duration test pulse (*col 3, ln 20-57*). Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to vary the sensitivity in **the combination of Yarkosky and Levinson's** system as suggested by **Hochstuhel**. The motivation for doing so would have been to adjust the sensitivity to the most appropriate level in accordance to the purpose of the application so as to achieve the optimal result. Therefore, the rationale of applying a known technique (**Hochstuhel's**) to a known system (**the combination of Yarkosky and Levinson's**) ready for improvement to yield predictable results has been clearly articulated herein with the *Graham* inquiries and findings as presented above. In *Dann v. Johnston* 525 U.S. 219, 189 USPQ257 (1976) The Court held that "[t]he gap between the prior art and respondent's system is simply not so great as to render the system nonobvious to one reasonable skilled in the art."

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. The prior art made of record in previous action and not relied upon is considered pertinent to applicant's disclosure.

**Tran, M.V.** *"Fiber-Optic Transmitter and Receiver Design."* OVC2000 Conference, 5-10 March 2000: RX-7 is cited herein to illustrate a common and well known configuration of a "Transimpedance Amplifier".

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

8. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai Lun Leung whose telephone number is (571) 272-5504. The examiner can normally be reached on 11:30am-9:00pm Mon-Thur.

Art Unit: 2613

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DWL  
11/4/2007



JASON CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600